

What is claimed is:

1. A method for forming a metal silicide layer in a self-aligned manner on a source region, a drain region and a gate electrode of a semiconductor device formed on a semiconductor substrate, said method comprising the steps of:
  - 5 depositing a cobalt film over an entire surface of said semiconductor device formed on said semiconductor substrate, forming said metal silicide layer on said source region, drain region and said gate electrode by performing a heat
  - 10 treating thereof, and
  - etching away an unreacted cobalt film remaining on said semiconductor substrate using an admixture solution made of hydrochloric acid, hydrogen peroxide, and water, having relative concentration ratio thereof ranging from 1:1:5 to
  - 15 3:1:5, at a solution temperature of 25 to 45°C, with an etching time of 1 to 20 minutes.